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Navy Case No. 82,627

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of :  
Louis F. Aprigliano et al. :  
Serial No. 09/656,017 : Group Art Unit: 1722  
Filed: Sept. 7, 2000 : Examiner: K. Lin  
For: METHOD OF PRODUCING CORROSION : CONFIRMATION NO. 2288  
RESISTANT METAL ALLOYS WITH :  
IMPROVED STRENGTH AND DUCTILITY :

APPEAL BRIEF

Assistant Commissioner for Patents  
Washington, D.C. 20231

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Sir:

This brief relates to an appeal seeking review by the Board of Patent Appeals and Interferences of the Examiner's decision finally rejecting claims 1-3 and 5-8 as set forth in the final Office action dated Feb. 26, 2002.

(1) REAL PARTY IN INTEREST

The party of interest in the above entitled application is the United States of America represented by the Secretary of the Navy as assignee of the entire interest in the subject invention of the above named inventor.

(2) RELATED APPEALS AND INTERFERENCES

There are no prior appeals or interferences related to this appeal.

(3) STATUS OF CLAIMS

Claims 1-3 and 5-8 are presently pending and on appeal, and stand finally rejected under 35 U.S.C. 103(a).

(4) STATUS OF AMENDMENTS

Following the current final Office action of Feb. 26, 2002, a response to the final rejections set forth therein was filed on March 7, 2002 in an Amendment Under Rule 116, proposing insertion of certain data only into claims 2, 6 and 8 under appeal. Entry of such Rule 116 amendments was denied by the Examiner in an Advisory Action dated March 27, 2002.

Claims 1-3 and 5-8 now on appeal were previously subject to final rejections under 35 U.S.C. 103(a) over the same prior art references of record in a prior final Office action dated Nov. 8, 2001, to which a response was filed on Nov. 15, 2001 requesting withdrawal of the finality of such prior final rejections as being premature. In view of a first Petition Under Rule 181 filed Dec. 13, 2001, the finality of such prior final rejections was withdrawn pursuant to a Decision On Petition dated Feb. 11, 2002 preceding the current final Office action. A second Petition Under Rule 181 was then filed on April 4, 2002 seeking withdrawal of the finality of the final rejections in the current final Office action of Feb. 26, 2002 because of certain new issues introduced therein. Since no decision has been received to date on the aforesaid second Rule 181 petition, this appeal is submitted in advance of the appeal deadline of May 26, 2002 to avoid abandonment of the application.

A correct copy of claims 1-3 and 5-8 on appeal, subject to the final rejections as stated in the current final Office action, is presented herewith in the accompanying APPENDIX.

(5) SUMMARY OF THE INVENTION

A concise explanation of the subject invention covered by the claims on appeal is as follows:

The subject invention to which the claims on appeal are limited, relates to a process as diagrammed in FIG. 1, for deposit by casting (24) of a metallic molten alloy onto a surface, after such alloy undergoes atomization (22) into spray droplets. The metallic alloy is formed by

mixing and heating (18) of a base metal such as nickel (14) and a corrosion-resisting component such as chromium (16). A high content of the chromium component is selected to be between 52% and 48% by weight, as indicated on page 3, lines 9-10 of the specification. An inert gas such as nitrogen is selected to cover the alloy during atomization (12) so to form spray droplets undergoing casting deposit (24) onto a surface as described on page 3, lines 15-19 of the specification. The exposure of the foregoing metallic alloy to the nitrogen cover gas during its atomization creates its high yield strength of 145 ksi and ductility or tensile elongation of 25% or greater as explained on page 3, line 22 to page 4 line 2 of the specification.

(6) ISSUE

Presented for review in this appeal are final rejections involving a question as to what the effect of the scope of the claims on appeal has in regard to limitations set forth therein covering certain disclosed distinctions over the prior art references.

(7) GROUPING OF CLAIMS

Claims 1, 5 and 7 form one group of independent claims relating to a process involving use of an inert gas to cover a mixture of base metal and corrosion-resisting component as an alloy being cast. Claims 2, 3, 6 and 8 form a second group of claims dependent from those of the first group, which limit the base metal to nickel and the inert cover gas to nitrogen.

(8) ARGUMENT

According to the current final Office action dated Feb. 26, 2002, all of the claims on appeal are finally rejected under 35 U.S.C. 103(a) as unpatentable over either the Nakamori et al., the Zurecki et al. or the Long et al. patent as a primary prior art reference of record, in view of certain teachings set forth in the Coombs patent of record relied on as a secondary prior art reference. In regard to such three alternative primary prior art references, the prosecution record in this case establishes the Examiner's concession that each of such three primary prior art

references fails to disclose the claimed technique for atomizing an alloy, involving casting thereof onto a substrate surface. As to the teachings in the secondary prior art reference (Coombs patent), it clearly fails to teach or explicitly suggest use of such an alloy atomizing technique for alloys having a high content of a corrosion-resisting component, so as to increase its strength or achieve a high strength when deposited or cast onto a surface. Thus the claims on appeal patentably distinguishes over the prior art references applied by specifying in claim 1: "utilizing an inert cover gas--to endow the ductile alloy with high strength upon said casting thereof onto the surface", while claim 5 correspondingly recites: "utilizing an inert cover gas--to increase in strength the ductile alloy", and claim 7 correspondingly recites: "forming the alloy--under exposure to an inert cover gas--to thereby exhibit high strength while maintaining ductility".

The Examiner's arguments of record in support of the foregoing referred to rejections under 35 U.S.C. 103(a), heretofore presented before the current final Office action, were improperly formulated by impermissible use of hindsight to overcome the conceded inadequacies of the individual prior art references applied, by brushing aside high strength and ductility limitations of the claims on appeal, as indicated on page 2 of a ruling in the Decision On Petition dated Feb. 11, 2002.

In an effort to overcome such ruling of record in regard to use of hindsight, the Examiner rendered the current final Office action introducing an issue involving the scope of the claims on appeal in regard to the foregoing referred to high strength and ductility limitations of the claims on appeal. Thus, on page 4 of the current final Office action the Examiner again improperly sanctions use of hindsight reasoning by stating: "it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning", in view of his conclusionary assertion on page 3 that: "it is expected that the deposit alloy--will also increase its strength while maintaining ductility, as the claimed process does". To support the latter

quoted conclusionary assertion, page 3 of the current final Office action states: "it is noted that the scope of the claims does not clearly describe from what strength the strength is increased and under what ductility the ductility is maintained". Data regarding the extent of the strength increase and ductility maintenance, as set forth by the claims on appeal, is covered by the description on page 3, lines 18-22 of the original specification, pursuant to the last paragraph of 35 U.S.C. 112 as interpreted by the Court in the case of In re Donaldsen, 29 USPQ 2d 845. Reference to such portion of the specification for support of the claim recitations in question was already referred to during prosecution of the present application. The recitations in the claims on appeal relating to strength increase and ductility as hereinbefore quoted, cannot therefore be ignored or disregarded on the basis of being too broad in scope, especially since the presentation of data in support thereof in the specification should be considered as evidence of non-obviousness, as recently held on March 15, 2002 by the CCPA in the case of In re Glaiag, Fed. Cir. No. 00-1571.

The foregoing referred to reliance by the Examiner on hindsight reasoning so as to overcome conceded inadequacies of the prior art references relied on, without any identification of explicit suggestions in such prior art references, has been condemned by recent court decisions as an improper basis for a legal judgment of obviousness under 35 U.S.C. 103(a). Thus in the case of In re Lee, 61 USPQ 2d 1430, the CCPA held that the standard for a judgment of obviousness under 35 U.S.C. 103 rules out extractions from a combination of prior art references based on mere assertions as to general knowledge in order to negate patentability, without identifying any explicit hints or suggestions in the prior art references.

In view of the foregoing, the final rejections of claims 1-3 and 5-8 under 35 U.S.C. 103(a) as stated in the current final Office action to be reviewed, are in error. Reversal of such final rejections is therefore respectfully solicited.

Respectfully submitted,

  
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(9) APPENDIX

The claims on appeal are as follows:

1. In a method of producing a ductile alloy having a base metal by casting a molten stream as a spray of droplets onto a surface; the improvement residing in: selecting a corrosion resisting material as a component forming a high content of the alloy which is exclusively limited to said component and the base metal for deposit onto said surface; and utilizing an inert cover gas for mixing of said component with the base metal and for atomization of the molten stream to endow the ductile alloy with high strength upon said casting thereof onto the surface.
2. The method as defined in claim 1, wherein said metal is nickel and the corrosion resisting material forming the component is chromium constituting between 48% and 52% of weight of the alloy as the high content thereof.
3. The method as defined in claim 2, further including: selection of nitrogen as the inert gas; pressurizing said inert gas and directing jets thereof into said molten alloy stream for effecting said atomization and deposit onto the surface.
5. In a method of casting a ductile alloy having a base metal by heating thereof to produce a molten stream that is atomized into a spray of droplets directed onto a moving substrate surface; the improvement residing in: a selecting a corrosion resisting material as a component of the alloy undergoing said heating; exclusively limiting said alloy to the base metal and the corrosion resisting material; and utilizing an inert cover gas to atomize the molten stream into said spray of droplets for deposit onto said surface to increase in strength the ductile alloy.

6. The method as defined in claim 5, wherein said base metal is nickel, the corrosion resisting material is chromium and the inert cover gas is nitrogen.

7. In a method of producing an alloy formed exclusively from a base metal and a corrosion resisting component deposited onto a moving substrate surface, the improvement residing in: limiting the alloy exclusively to said base metal and the corrosion-resisting component; and forming the alloy by spray casting under exposure to an inert cover gas for said deposit onto said surface to thereby exhibit high strength while maintaining ductility.

8. The method as defined in claim 7 wherein said base metal is nickel, said corrosion-resisting component is chromium and said inert cover gas is nitrogen.